

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CIRBA INC. (d/b/a DENSIFY)
and CIRBA IP, INC.,

Plaintiffs,

v.

VMWARE, INC.,

Defendant.

C.A. No. 19-742-LPS

**DEFENDANT'S OPENING BRIEF IN SUPPORT OF
ITS MOTION TO DISMISS CLAIM I OF THE COMPLAINT
PURSUANT TO FED. R. CIV. P. 12(B)(6) AND 35 U.S.C. § 101**

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Defendant VMware, Inc. (“VMware”) moves to dismiss Plaintiffs’ claim for infringement of U.S. Patent No. 8,209,687 (“’687 patent”; D.I. 1-1, Ex. 12) under 35 U.S.C. § 101.

I. INTRODUCTION

Plaintiffs Cirba, Inc. (d/b/a Densify) and Cirba IP, Inc. (collectively, “Cirba”) have moved to enjoin VMware’s alleged infringement of claims 2, 7, 13, and 16 of the ’687 patent (one of two asserted patents in this case). (D.I. 11.) Because the ’687 patent is directed to ineligible subject matter under Section 101, however, the Court should dismiss Cirba’s related infringement allegations and also deny Cirba’s preliminary injunction motion as moot.

The ’687 patent fails both prongs of the Supreme Court’s two-part test in *Alice Corporation v. CLS Bank International*, 573 U.S. 208 (2014). Under *Alice* Step 1, the claims of the ’687 patent are directed to the abstract idea of *collecting* and *analyzing* information. The claims recite their steps only abstractly using computers as tools in the context of virtualization, without specifying how to accomplish those steps. That one can perform all claim steps mentally or using only pen and paper confirms their abstract nature.

Under *Alice* Step 2, the claims of the ’687 patent lack an inventive concept that might transform the abstract idea of collecting and analyzing data into a patent-eligible invention. The claims rely only on vague, functional descriptions of generic computer components for implementing the recited steps in conventional ways. Even if applying the claims to the specific context of virtual computer systems were unconventional—and the specification confirms it is not—a new context could not alone render the claims patent-eligible.

The claims of the ’687 patent are on all fours with the claims at issue in the Federal Circuit’s *Electric Power* decision, which held a patent invalid under Section 101. There, as here, the claims were merely directed to “collecting information, analyzing it, and displaying certain

results of the collection and analysis.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016).

II. NATURE AND STAGE OF PROCEEDINGS

On April 25, 2019, Cirba brought this action against VMware for allegedly infringing two patents (the ’687 patent and U.S. Patent No. 9,654,367) and certain purported trademarks. (Compl. (D.I. 1) ¶¶ 92-153.) Count I of the Complaint alleges infringement of the ’687 patent. (*Id.* ¶¶ 92-105.) Cirba specifically identified only one claim from the ’687 patent by number, alleging that VMware infringes “at least, but not limited to, claim 7.” (*Id.* ¶¶ 63, 72, 93; D.I. 1-1, Ex. 12.)

On May 6, 2019, Cirba moved for a preliminary injunction based only on the alleged infringement of claims 2, 7, 13, and 16 of the ’687 patent.¹ (D.I. 11.) In its supporting brief, Cirba stated that (a) claim 7 is “illustrative,” (b) claims 2, 13, and 16 have “the same functionality described for claim 7,” and (c) “no formal claim construction is necessary because the claims of the patent use clear technical terms that all should be accorded their plain and ordinary meaning.” (D.I. 12 at 12, 14, 16.)

On May 22, 2019, the Court ordered that briefing on VMware’s proposed motion to dismiss “shall proceed in accordance with the local rules” and would “be argued at the same hearing as Plaintiff’s [preliminary injunction] motion” (D.I. 38).²

¹ As the ’687 patent is the sole basis for Cirba’s preliminary injunction motion, VMware addresses only that patent in this motion to dismiss. VMware also believes that the other asserted patent is ineligible under Section 101 and may request the Court’s assistance in invalidating that patent as well.

² VMware respectfully notes that its motion to dismiss suspends the time to respond to claims in the Complaint that are not addressed by its motion, consistent with this District’s precedent. *See* Fed. R. Civ. P. 12(a)(4)(A); *Advanced Microscopy, Inc. v. Thermo Fisher Sci.*, No.15-1022-LPS (D. Del.) (partial motion to dismiss filed at D.I. 12, no Answer filed) (Ex. A); *Princeton Digital Image Corp. v. UbiSoft Entm’t SA*, No. 13-335-LPS (D. Del.) (partial motion to dismiss filed at D.I. 4; Answer filed at D.I. 9, after First Amended Complaint (D.I. 8)) ((Ex. B (docket excerpt));

III. SUMMARY OF ARGUMENT

1. The claims of the '687 patent do not satisfy the two-part test for patent eligibility under *Alice*. 573 U.S. at 217-18.

2. The '687 patent's claims are directed to the abstract idea of collecting and analyzing data. Humans have performed such data collection and analysis steps, whether mentally or by pencil and paper, since time immemorial. The claims thus fail *Alice* Step 1.

3. Under *Alice* Step 2, the claims must add an “inventive concept” to this abstract idea to be patentable. But the claims instead merely apply the abstract idea to a particular technological field—virtualized computer systems—using only conventional and non-specific components. Because the claims also fail *Alice* Step 2, they are unpatentable.

IV. STATEMENT OF FACTS

A. The '687 Patent

The '687 patent is entitled, “Method and System for Evaluating Virtualized Environments.” The Abstract indicates that the evaluation is “for ongoing management” of a virtual environment in light of “changing requirements and a changing environment.”

(‘687 patent at Abstract.) The specification identifies the relevant technical field as “information technology infrastructures,” with the purported invention allegedly useful for “evaluating visualized [sic] environments.” (*Id.* at 1:10-12.)

As the '687 patent explains, virtualization involves placing multiple instances of operating system (“OS”) software (or “virtual guests”) on a host computer (a “virtual host”) to

Steelhead Licensing LLC v. Kyocera Corp., No. 13-037-LPS (D. Del.) (partial motion to dismiss filed at D.I. 12, no Answer filed) (Ex. C); *see also Gortat v. Capala Bros.*, 257 F.R.D. 353, 366 (E.D.N.Y. 2009) (“[F]iling a partial motion to dismiss will suspend the time to answer those claims or counterclaims that are not subject to the motion. If the opposite rule controlled and partial motions to dismiss did not suspend a party’s obligation to reply to additional claims, the result would be ‘a procedural thicket’ of piecemeal answers that would poorly serve judicial economy.” (internal citations omitted)).

form a virtual (or “virtualized”) environment. (*See id.* at 1:64-67, 2:27-40.) The specification concedes that virtualization was well known long before the ’687 patent. (*See id.* at 1:64-67.) In fact, the specification identifies “VMware” as its first example of a “virtualization technology” vendor. (*Id.* at 1:67-2:2.)

B. Representative Claim 7

Claim 7, the only claim specifically identified in the Complaint (D.I. 1 ¶¶ 63, 72, 93), is representative. It describes a method for “validating an existing virtualized environment.” At base, claim 7’s method consists of three steps: (1) obtaining data for a plurality of virtual machines related to various constraints; (2) evaluating the placement of the virtual machines in light of those constraints; and (3) identifying virtual machines with suboptimal placement.

The entire text of the claim appears below, with the three action steps highlighted:

A method for validating an existing virtualized environment comprising a plurality of virtual machines placed on one or more virtual hosts, said method comprising:

obtaining a data set for each of said plurality of virtual machines, each data set comprising information pertaining to technical, business and workload constraints associated with a corresponding virtual machine;

evaluating the placement of said virtual machines in said virtualized environment using said data sets by evaluating each virtual guest against each virtual host and other virtual guests using one or more rule sets pertaining to said technical, business and workload constraints to determine guest-host placements; and

identifying the existence of virtual machines with suboptimal placements to enable alternative placements for said virtual machines.

(*Id.* at 38:57-39:5.)

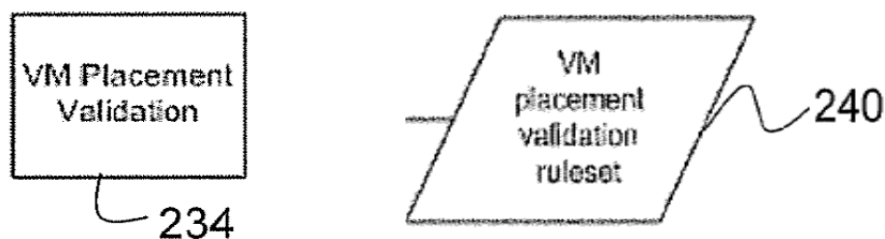
While claim 7 does not refer either to specific computer hardware or software (*e.g.*, a processor or memory), the claim presumably involves a computer environment. It refers to “virtual machines” and “virtual hosts,” consistent with the specification’s discussion of

information technology infrastructure. (*See id.* at claim 7, 1:64-2:2, 6:41-43, 24:44-48.)

Claim 7 recites no technical details for performing its “obtaining,” “evaluating,” and “identifying” steps. Nor does it offer any specific or concrete solutions for achieving the desired outcomes. Among other things, the claim does not:

- Identify **how** to obtain data;
- Specify particular **types** of data or data structures;
- Identify evaluation **rules**, or even specific limits on those rules, instead referring only to broad categories (*i.e.*, “technical,” “business,” and “workload”);
- Explain **how** to evaluate the placement of the virtual machines using the “data sets” and “constraints”; or
- Specify criteria for assessing whether a placement is “suboptimal.”

The specification similarly provides scant detail regarding the elements of the claimed method steps, instead generically pointing to black boxes performing the claimed functionality. (*See, e.g.*, ’687 patent at Figs. 42 & 43, 34:30-35:23.) For example, claim 7’s “evaluating step” and “rule set” correspond to the boxes 234 and 240, depicted below, from Figures 42 and 43:



Neither box—nor the related description from the specification—provides details about the “evaluating” step or the “rule set.”

The specification also teaches that the claim elements were conventional and well-known before the purported invention. For example, the patent’s “Background” section explains that virtualization systems were well known and describes the conventional system components that

they employed:

Virtualization involves virtualizing a physical system as a separate guest OS [virtual guest] instance on a host machine [virtual host]. This enables multiple virtualized systems to run on a single physical machine, e.g. a server. Examples of virtualization technology include VMware®, Microsoft Virtual Server®, IBM LPAR®, Solaris Containers®, Zones®, etc.

(*Id.* at 1:64-2:2.) The specification later indicates that prior art virtualization hosts and management frameworks—including those from VMware—“typically provide[d] [interfaces] to collect . . . configuration and workload data.” (*Id.* at 34:49-53.)

C. Other Claims

The '687 patent's other claims involve the same general functionality as claim 7, and similarly deal only in generalities. For example, while claim 2 refers to “generating a virtual environment,” “rebalancing systems,” and “refining the environment,” it provides no details about how to accomplish these abstract steps. Regarding “rebalancing” and “refining,” the claim only describes those steps as involving the use of “virtual design scenarios.” Likewise, computer-readable media (“CRM”) claim 13 and its dependent claim, claim 16, cover the same general functionality as method claims 2 and 7. These claims recite, among other things, “designing a virtualized environment,” “obtaining a data set,” “performing a . . . compatibility analysis,” “evaluating” virtual guests using “rule sets,” “rebalancing . . . systems,” and “refining [the] virtualized environment.”

Besides being non-specific, the steps of the other claims in the patent involve routine tasks well-known in the art. The specification, for example, indicates that “virtualizing a physical system,” “avoid[ing] redundancies and/or under-utiliz[ation],” and “evaluat[ing]” “cost-savings objective[s]” using “consolidation strategies” all were well known in the art before the '687 patent. (*Id.* at 1:64-65, 1:30-34, 1:57-63.)

V. LEGAL STANDARD

As the Supreme Court held in *Alice*, “abstract ideas are not patentable.” *Alice*, 573 U.S. at 216 (quotation and citation omitted). *Alice* established a two-step framework for determining patent eligibility. First, the court determines whether the claims are “directed to” a patent-ineligible abstract idea. *Id.* at 217–18. If so, the court then considers the claim limitations to assess whether they transform the claim into a patent-eligible application of the abstract idea. *See id.*; *Citrix Sys., Inc. v. Avi Networks, Inc.*, 363 F. Supp. 3d 511, 518 (D. Del. 2019); *Valmont Indus., Inc. v. Lindsay Corp.*, No. 15-42-LPS, 2018 WL 5962469, at *3 (D. Del. Nov. 14, 2018). Whether a patent claims patent-eligible subject matter is a question of law. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1338 (Fed. Cir. 2017) (“*Capital One II*”).

“[T]he Federal Circuit has repeatedly affirmed [the] early resolution of patent eligibility challenges,” including at the pleading stage. *Citrix*, 363 F. Supp. 3d at 520. A court should dismiss patent infringement claims under Rule 12(b)(6) where, accepting patentee’s allegations as true, the asserted patent fails to claim patentable subject matter. *See Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373 (Fed. Cir. 2016).

In ruling on a motion to dismiss under Rule 12(b)(6), the court does not consider facts and documents outside the complaint, unless “the complaint references the documents or if the documents are integral to the plaintiff’s claims.” *AstraZeneca Pharms. LP v. Apotex Corp.*, No. 10-338-RBK-KW, 2010 WL 5376310, at *9 (D. Del. Dec. 22, 2010) (citing *In re Burlington Coat Factory Sec. Litig.*, 114 F.3d 1410, 1426 (3d Cir. 1997)); *see also Athena Diagnostics, Inc.*

v. Mayo Collaborative Servs., LLC, 915 F.3d 743, 755-56 (Fed. Cir. 2019).³

When the claims of a patent are “substantially similar and linked to the same abstract idea,” a court need not address each and every claim, but can invalidate all by focusing on a “representative” claim. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1348 (Fed. Cir. 2014).

A court is not required to construe the claims before performing a Section 101 analysis. *See Bancorp Servs., LLC v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1273-74 (Fed. Cir. 2012). “In some cases, claim construction is unnecessary because it is not disputed that the Section 101 eligibility decision does not turn on disputes regarding claim construction.” *M2M Sols. LLC v. Amazon.com, Inc.*, No. 17-202-LPS-CJB, 2017 WL 6294874, at *4 (D. Del. Dec. 11, 2017) (citing *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App’x 988, 991-93 & n.1 (Fed. Cir. 2014)).

If a court invalidates a patent under Section 101 on a motion to dismiss, any request for preliminary relief based on those claims becomes moot. *See, e.g., Thunder Power New Energy Vehicle Dev. Co. Ltd. v. Byton N. Am. Corp.*, 340 F. Supp. 3d 922, 924 (N.D. Cal. 2018).

VI. ARGUMENT

A. The Asserted Claims of the ’687 Patent Are Directed to an Abstract Idea.

1. The asserted claims are directed to the abstract idea of collecting and analyzing data.

As both the Federal Circuit and courts in this District have repeatedly recognized, “collecting information, analyzing it, and displaying certain results of the collection and analysis” are “a familiar class of claims ‘directed to’ a patent-ineligible concept.” *Elec. Power*

³ For example, in deciding a motion to dismiss under Section 101, an expert declaration cannot be considered, cannot create a factual dispute, and is not germane. *See Athena*, 915 F.3d at 755 (affirming district court’s refusal to consider, in ruling on a Section 101 motion to dismiss, an expert declaration submitted by the patent owner in opposition).

Grp., LLC v. Alstom S.A., 830 F.3d 1350, 1353 (Fed. Cir. 2016); *see also SAP Am., Inc. v. Investpic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (collecting and analyzing financial data abstract, quoting *Elec. Power*); *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1378, 1384-85 (Fed. Cir. 2019) (collecting and analyzing market data abstract, quoting *Elec. Power*); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1344-45 (Fed. Cir. 2018) (collecting cases); *Search & Soc. Media Partners, LLC v. Facebook, Inc.*, 346 F. Supp. 3d 626, 634-35 (D. Del. 2018) (in context of social computer network, “collecting, analyzing, and displaying information, without more, is an abstract idea”), *reconsideration denied*, No. 17-1120-LPS-CJB, 2019 WL 581616, at *6-*7 (D. Del. Feb. 13, 2019); *Uniloc USA, Inc. v. ADP, LLC*, No. 2018-1132, 2019 WL 2245938, at *9 (Fed. Cir. May 24, 2019) (claim directed to abstract idea of “license management method that indicates a user’s authorization to access an application”).

The claims in *Electric Power*, for example, involved monitoring an electric power grid network in real time and assessing vulnerabilities, such as grid stress and instability. 830 F.3d at 1352. The representative claim’s limitations included: (i) receiving data of various types and from various sources, both on and off the grid; (ii) detecting and analyzing events based on that data; (iii) deriving various metrics from the data; (iv) displaying the data and the analysis results; and (v) updating the measurements. *See id.* The claims also included an evaluation step, namely, “deriving a composite indicator of reliability that is an indicator of . . . vulnerability.” *Id.* Describing the claims as merely directed to “collecting information, analyzing it, and displaying certain results of the collection and analysis,” the Federal Circuit deemed them to be patent-ineligible. *Id.* at 1353.

Here, representative claim 7 (D.I. 12 at 12) is directed to the same abstract idea of collecting and analyzing information as the claims in *Electric Power*. Claim 7 recites:

1. “Obtaining a data set” (*i.e.*, collecting information);
2. “Evaluating the placement of . . . virtual machines . . . using one or more rule sets” (*i.e.*, analyzing information); and
3. “Identifying the existence of virtual machines with suboptimal placements” (*i.e.*, analyzing information).

Collecting and analyzing data is a patent-ineligible abstract idea even if further actions are taken based on that data collection and analysis. *See, e.g., SAP Am.*, 898 F.3d at 1167 (claims patent ineligible when they involved “reporting or displaying the results of the analysis”); *Elec. Power*, 830 F.3d at 1352, 1354 (“deriving a composite indicator of reliability” and “displaying the results” of data analysis); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093 (Fed. Cir. 2016) (“provid[ing] notification” of improper access to personal health information based on data analysis).

Here, the steps in the claims of identifying suboptimal placements (claim 7), evaluating to determine placements (claim 13), or managing placements in a virtual environment, such as refining and rebalancing based on data analysis (claims 2 and 16), do not render the claims any less abstract than those that the Federal Circuit has found patent-ineligible. *See, e.g., Capital One II*, 850 F.3d at 1338-40 (“dynamically managing” and “manipulating” the data do not confer patent eligibility for claim reciting “a component that detects modification of the data . . . , and in response thereto modifies a data component in an XML document”).

Claim 7 is representative of the other asserted claims, because all are “substantially similar and linked to the same abstract idea.” *Content Extraction*, 776 F.3d at 1348 (quotation marks and citation omitted). Claim 13 claims the same abstract concept of collecting and analyzing data, only styled as a computer readable medium claim. Claim 2 merely adds general management steps to claim 7’s data collection and analysis steps, such as “rebalancing” and “refining” the virtual environment based on collecting and analyzing information. And claim 16

does the same for claim 13. (*Cf.* D.I. 12 at 16 (confirming that claims 2, 13, and 16 involve “the same functionality” as claim 7).)

2. The claims are not directed to improving computer functionality.

Patents that seek to claim “certain independently abstract ideas that use computers as tools,” but without offering any “improvement in computers as tools,” are invalid for lack of patentable subject matter. *Elec. Power*, 830 F.3d at 1354. The use of “generic” computer components to implement an abstract idea “do[es] not render the claims any less abstract.” *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015). Moreover, the “mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology.” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

Representative claim 7 epitomizes an unpatentable abstract idea using computers as tools. Claim 7 does not identify any specific hardware elements, an operating system, an arrangement for its “virtual machines,” or even a particular algorithm for its “one or more rule sets.” It merely identifies steps to take—obtaining data regarding constraints, evaluating the data, and identifying suboptimal placements of virtual machines—without claiming any particular way of doing so. Whether claim 7 improves the functionality of virtual computer environments is irrelevant, as that alleged technical benefit “flow[s] solely from performing an abstract idea in conjunction with well-understood structure.” *Citrix*, 363 F. Supp. 3d at 522.

Nor are the other claims directed to improving computer functionality. Although claim 2’s stated purpose is to “manag[e] a virtualized environment,” its recited steps (*e.g.*, “facilitating the deployment of [a] virtualized environment”) lack detail as to how to accomplish them. And like claim 7, claim 2 also does not expressly require the use of computers to perform the recited steps. While Cirba may argue that the claims were “intended to be used in

conjunction with computer-based . . . tools,” the claims are “not confined to that conception,” and “[t]he § 101 inquiry must focus on the language of the [a]sserted [c]laims themselves.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016).

Claims 13 and 16 fare no better in applying a set of instructions to “systems.” Although Cirba may argue that these claims “limit the abstract idea to a particular environment—a [computer] system—that does not make the claims any less abstract for the step 1 analysis.” *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). Like claim 7, these claims are directed to the abstract idea of collecting and analyzing data.

The claims of the ’687 patent are even more abstract than the claims found ineligible in *TLI Communications*, where the Federal Circuit found that “concrete, tangible components” were actually recited. 823 F.3d at 611. While the claims here may be intended to be practiced in a computing environment, they are not directed to improving computer functionality and do not recite any specific computer or hardware component, instead reciting only generic computer components in functional terms. As the specification explains, “[t]he principles and algorithms discusse[d] are applicable to *any system* having a plurality of subsystems.” (’687 patent at 37:16-20 (emphasis added).)

Although Cirba may argue that the claims improve upon conventional optimization tools, that would be incorrect. Nothing in the claims recites any specific, concrete solutions to any optimization problem, or specific techniques or structures for achieving those solutions. Instead, they merely claim carrying out purported optimization at a generic, functional level—such as “identifying . . . suboptimal placements” (claim 7), “evaluat[ing] . . . to determine guest-host placements” (claim 13), and “rebalancing” or “refining” “according to” “virtual design scenarios” (claims 2 and 16). As the Federal Circuit recently noted in *Uniloc*, if a “claim is

wholly functional and does not include the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it,” it is directed to an abstract idea. 2019 WL 2245938, at *7 (Fed. Cir. May 24, 2019) (quotation and citation omitted).

3. The fact that the claims can be performed mentally or with a pencil and paper confirms that they are directed to an abstract idea.

Ideas that could be implemented mentally or via pencil and paper remain abstract even when automated using computer software or hardware. *See, e.g., Intellectual Ventures I LLC v. Erie Indem. Co.*, 711 F. App’x 1012, 1015 (Fed. Cir. 2017) (“*Erie*”) (“[W]e found claims that could be performed in the human mind[] or by a human using a pen and paper were directed to patent-ineligible mental processes.”) (quotation and citation omitted); *Synopsys*, 839 F.3d at 1147.

The abstract idea underlying the ’687 patent—collecting information and then evaluating that information to assess or manage performance under constraints—indisputably can be done mentally or with a paper and pencil. Walking through the steps of claim 7 confirms as much:

- Step 1. Collect a data set for the several virtual machines running on a host, the data set including a technical parameter (*e.g.*, the identity of the OS), a business parameter (*e.g.*, the physical location), and a workload parameter (*e.g.*, resource utilization, such as memory usage). For example, this could be done mentally, by pulling up the relevant data on a computer screen for review, or via pencil and paper, by printing out a copy of the relevant data.
- Step 2. Evaluate the placement of each of the virtual machines against each other, using a defined rule set (*e.g.*, a rule that the memory used by each of the virtual machines not be more than a certain amount). For example, this could be done mentally, by comparing the data on the screen against known (memorized) rules, or via paper and pencil, by comparing a print out of the relevant data against a print out of the relevant rules.

- Step 3. Identify the existence of virtual machines with suboptimal placements (*e.g.*, too much memory used) to enable their alternative placement (*e.g.*, moving the virtual machine to another host). For example, this could be done mentally, by identifying suboptimal placements based on discrepancies between the data on the screen and known (memorized) rules, or via paper and pencil, by identifying suboptimal placements based on discrepancies between the printed data and the printed rules, and underlining or otherwise marking those suboptimal placements.

Like the claims held ineligible in *Erie*, the '687 patent's steps are "'the same [steps] (though perhaps phrased with different words) that humans in analogous situations . . . have [used] for decades.'" 711 F. App'x at 1017 (quoting *FairWarning*, 839 F.3d at 1094-95). This is true even in the specific context of managing information technology infrastructure and computer resources, as the specification acknowledges. The specification explains that, with prior art distributed systems, "choosing appropriate consolidation solutions [allegedly was] difficult, error-prone and time consuming." ('687 patent at 2:12-21.) But as multiple courts have held, merely automating that consolidation process or rendering it more efficient does not render the idea any less abstract. *See Bancorp*, 687 F.3d at 1279 (claim ineligible even if "the computer . . . performs more efficiently what could otherwise be accomplished manually"); *see also Parker v. Flook*, 437 U.S. 584, 586 (1978) (claims directed to "computations [that] can be made by pencil and paper" unpatentable even if "primarily useful for computerized calculations"); *Trading Techs*, 921 F.3d at 1378 ("providing information to traders in a way that helps them process information more quickly" an abstract idea); *Uniloc*, 2018 WL 2245938, at *9 ("This is not an improvement in network architecture—it is the use of a computer as a tool to process information."); *Citrix* at 523 (claims directed to an abstract idea where "the technological context is computer networks, and the purported benefits arise from *more accurate determination* of whether a network service is available") (emphasis added).

B. The '687 Patent Claims Do Not Include an Inventive Concept.

1. The claims' use of general-purpose computer components in conventional ways is not inventive.

An abstract idea does not become patent-eligible when “the claims simply instruct the practitioner to implement the abstract idea with routine, conventional activity” such as through a “general purpose computer.” *Ultramercial Inc. v. Hulu, LLC*, 772 F.3d 709, 715-16 (Fed. Cir. 2014). The Federal Circuit has confirmed in a variety of contexts that implementation via generic or conventional computer components will not add an inventive concept. *See Credit Acceptance*, 859 F.3d at 1056 (“user terminal” not inventive); *Content Extraction*, 776 F.3d at 1347-48 (“memory” not inventive); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1374-75 (Fed. Cir. 2017) (“interface” and “memory” not inventive); *SAP Am.*, 898 F.3d at 1170 (“generic parallel processing components . . . on which the claimed method could run” not inventive).

Here, the '687 patent uses generic, functional computer components and network terms in conventional ways. The specification acknowledges that virtualization technology was well-known before the '687 patent. (*See* '687 patent at 34:42-60 (listing prior “[e]xamples of virtualization management frameworks,” including VMware DRS).) The “virtual machines,” “virtual guest[s],” “virtual host[s],” and “physical systems” in claims 2, 7, 13, and 16 are components of prior art virtualized systems and were themselves well-known and therefore non-inventive. The specification’s “Background” section teaches that:

Virtualization involves virtualizing a physical system as a separate guest OS [virtual guest] instance on a host machine [virtual host]. This enables multiple virtualized systems to run on a single physical machine, e.g. a server. Examples of virtualization technology include VMware®, Microsoft Virtual Server®, IBM LPAR®, Solaris Containers®, Zones®, etc.

(*Id.* at 1:64-2:2; *see also, e.g., id.* at 26:5–9 (listing various prior art “virtual guests,” including

Windows® Server 2003 and 2008 and Linux Enterprise Server).)

Such “off-the-shelf, conventional computer, network, and display technology for gathering, sending, and presenting the desired information” cannot overcome *Alice* step 2. *Elec. Power*, 830 F.3d at 1355; *accord TLI Commc’ns*, 823 F.3d at 615 (“[V]ague, functional descriptions of server components are insufficient to transform the abstract idea into a patent-eligible invention.”); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (patent invalid where nothing in the claims requires anything other than conventional computer components).

The specification confirms the claims’ functional nature and reliance on conventional virtualization technologies. For example, the specification points to nondescript black boxes 234 and 240 when describing claim 7’s “evaluating” step” and “rule set.” (*See, e.g.*, ’687 patent at Figs. 42 & 43, 34:30-35:23.) Similarly, while Cirba may attempt to argue that the use of “specific virtualization rule sets” (*id.* at 5:66-6:4) is somehow novel, the specification belies that claim by generically describing “rule sets” as “groupings of rules that represent higher level considerations such as *business objectives* and *administrative concerns . . .*” (*Id.* at 12:1-4 (emphasis added).) And the claims themselves (the focus of the analysis) do not identify express limits on those rules—much less explain how general “business” and “administrative”-related rules can improve upon virtualization infrastructure. Even if those rules provide “a new source or type of information,” which they do not, they are still generically described like the “user identity based policy,” “administrator policy override definition,” and “user policy override definition” in *Uniloc*, and therefore are “still abstract information that, as such, does not contribute to any inventive concept.” *Uniloc*, 2018 WL 2245938, at *9.

2. Limiting the abstract idea to the technological context of virtualized computer systems does not provide an inventive concept.

Cirba cannot overcome *Alice* step 2 by arguing that its claims limit the abstract idea of collecting and analyzing data to the particular technological context of virtualized computer systems. Under clear authority from the Federal Circuit and this District, applying an abstract idea to a particular technological environment cannot provide the inventive concept sufficient to render an abstract idea patentable.

It is well established that “the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment.” *Alice*, 573 U.S. at 222-23 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)). This is true even if applying the abstract idea in a particular technological environment was novel when the applicants filed for their patent. *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 (Fed. Cir. 2016) (“[T]he fact that some of those steps had not previously been employed in the art was not sufficient, standing alone, to confer patent eligibility upon the claims at issue.”) (quotation and citation omitted).

The Federal Circuit has repeatedly reaffirmed this principle. For example, in *BSG Tech LLC v. Buyseasons, Inc.*, the court explained that “it is irrelevant whether [analyzing and evaluating data] may have been non-routine or unconventional as a factual matter.” 899 F.3d 1281, 1291 (Fed. Cir. 2018). “As a matter of law, narrowing or reformulating an abstract idea does not add ‘significantly more’ to it.” *Id.* Likewise, in addressing claims reciting the novel display of profit-and-loss values on a trading screen, the court held that “a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept.” *Trading Techs.*, 921 F.3d at 1385 (even if the claims recited a novel display of P&L values on a trading screen) (quotation and citation omitted); *see also SAP Am.*, 898 F.3d at 1169-

70 (limiting claims for “an advance in mathematical techniques in finance” to the particular field of “investment information” did not confer patent eligibility); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 774 (Fed. Cir. 2019) (making electric vehicle charging stations “network-controlled” did not provide the inventive concept even if an unconventional solution, as “network control is the abstract idea itself”).

This Court, too, has repeatedly recognized that limiting or applying an abstract idea to a particular technological context cannot be enough to confer patent eligibility. For example, in *Search & Social Media Partners*, the fact that the claims were limited to the technological environment of a social network was insufficient to make them patentable. 346 F. Supp. 3d at 637. Likewise, in *Citrix*, the allegedly novel and unconventional use of dynamic response time could not “provide an inventive concept,” “no matter how beneficial when applied in a technical context.” 363 F. Supp. 3d at 523.

Here, the particular ordered combination of the claimed “obtaining,” “evaluating,” and “identifying” steps cannot render the claims inventive. As explained above, one can perform the ordered combination of steps (whether as recited in the method claims or computer-readable medium claims) manually with a pencil and paper. Although the ’687 patent purports to make that performance less “difficult, error-prone and time consuming,” nowhere does it allege that the ordering of steps is somehow novel. (’687 patent at 2:12-21.)

In this regard, the claims here are indistinguishable from those in *In re Villena*, which involved “receiving user input, producing property valuations, and providing display information.” 745 F. App’x 374, 376 (Fed. Cir. 2018). The Federal Circuit explained that those “basic steps” represented “a classic case of implementing an abstract idea on a computer, which is not eligible under *Alice*.” *Id.* Likewise, the claimed “basic” steps of “obtaining,”

“evaluating,” and “identifying” information here are equally abstract and patent-ineligible.

VII. CONCLUSION

The '687 patent broadly claims the abstract idea of collecting and analyzing information. Even when applied in the context of virtualized computer systems, that abstract idea fails both steps of the *Alice* test. VMware therefore requests that the Court rule the '687 patent to be directed to unpatentable subject matter and dismiss with prejudice Claim I of Cirba's Complaint.

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